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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,753	09/10/2003	Jiro Yuzawa	00597/0200038-US0	3476

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EXAMINER

DRAKE, MALIK N

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,753

Applicant(s)

YUZAWA, JIRO

Examiner

Malik N. Drake

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Podtchereniaev et al. (U.S. Patent No. 6,502,410), hereinafter Podtchereniaev

The invention of Podtcheveniaev discloses a refrigerant composition comprising R245fa, R125, R23, and R14 (see figures 7-12). It also discloses a refrigerating circuit comprising a condenser (104), an evaporator (112), and compressor (102), heat exchangers (206, 208), and gas-liquid separators (134, 138, 142) disposed in a multi-stage manner.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. (U.S. Patent No. 6,640,841), hereinafter Thomas, in view of Seino et al. (U. S. Patent No. 6,235,215), hereinafter Seino and Missimer (U.S. Patent No. 3,768,273), hereinafter Missimer.

The invention of Thomas discloses a refrigerant composition comprising R245fa, R125, and 508A or 508B. (See column 3, lines 32-41.)

Thomas lacks disclosure of the refrigerant comprising R23 and R14. Seino shows it is known to have refrigerants comprising R23 (column 2, lines 19-37). Missimer shows it is known to have a refrigerant comprising R14 (column 4, line 57).

All of the substances (R245fa, R125, R508A, R508B, R23, and R14) are well-known components of mixed refrigerants. Accordingly, it would have been obvious to one of ordinary skill in the art, when having a knowledge of these references at the time of the invention, and when considering the prior art as a whole, to have modified the refrigerant of Thomas to include R23 and R14 for the purpose of producing an alternative refrigerant to chlorofluorocarbon refrigerants.

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Thomas also lacks disclosure of the refrigerant comprising pentane. Seino shows it is known to have a refrigerant that comprises R23 also comprise pentane (column 2, line 47).

Accordingly, it would have been obvious to one of ordinary skill in the art, when having a knowledge of these references at the time of the invention, and when considering the prior art as a whole, to have modified the refrigerant of Thomas to include pentane for the purpose of reducing refrigeration temperature.

Lastly, Thomas lacks disclosure of a refrigerating circuit comprising a condenser, an evaporator, a compressor, heat exchangers, and gas liquid separators. Missimer shows that such a refrigeration circuit is known. (See column 5, lines 28-37; column 9, line 63; and column 11, line10.)

Accordingly, it would have been obvious to one of ordinary skill in the art, when having a knowledge of these references at the time of the invention, and when considering the prior art as a whole, to have modified the refrigerating circuit of Thomas to include a condenser, an evaporator, a compressor, heat exchangers, and gas liquid separators for the purpose of producing refrigeration.

Conclusion

Any inquiry concerning this communication should be directed to Examiner Malik Drake at telephone number (703) 305-0249 and/or fax number (703) 872-9306. The Examiner's work schedule is 9:30am – 8:00pm, Monday through Thursday.


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